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ABSTRACT

For the past two decades the central Information Retrieval Services of the Max Planck Society has been providing database searches for scientists in Max Planck Institutes and Research Groups throughout Germany. As a supplement to traditional search services offered by professional intermediaries, they have recently fostered the introduction of a new information system that can be accessed directly from all sites. Ovid Technologies was chosen as partner for this project. Their common user interface offers database-specific search tools for the expert as well as for the novice user. Further advantages are the use of the TCP/IP protocol allowing immediate access from a number of different computer platforms, the client/server architecture and the adherence to the Z39.50 standard, thus providing interconnectivity with other library servers. The possibility of using the Ovid Local Loader to install internal databases under the same user interface as external databases was of particular interest to the Institutes. The advantages of a CD-ROM interface in combination with the performance of an online system has made this new service very popular among the scientists. Of critical importance for the quality and success of the project was the active participation of experienced information specialists during the planning, testing, installation and final production stages. End-users receive continued support with workshops, documentation, advice and a helf-desk for database specific questions. The Information Retrieval Services are now confronted not only with a variety of new responsibilities but also with many new opportunities for helping the users to gain the information they seek. (Author)

Providing Database Services in a Nationwide Research Organisation – Coexistence of Traditional Information Services and a Modern CD-ROM/Online Hybrid Solution

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Providing database services in a nationwide research organisation — coexistence of traditional information services and a modern CD-ROM/online hybrid solution

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Abstract: *For the past two decades the central Information Retrieval Services of the Max Planck Society have been providing database searches for scientists in Max Planck Institutes and Research Groups throughout Germany. As a supplement to traditional search services offered by professional intermediaries, we have recently fostered the introduction of a new information system that can be accessed directly from all sites. Ovid Technologies was chosen as partner for this project. Their common user interface offers database-specific search tools for the expert as well as for the novice user. Further advantages are the use of the TCP/IP protocol allowing immediate access from a number of different computer platforms, the client/server architecture and the adherence to the Z39.50 standard, thus providing interconnectivity with other library servers. The possibility of using the Ovid Local Loader to install internal databases under the same user interface as external databases was of particular interest to our Institutes. The advantages of a CD-ROM interface in combination with the performance of an online system ('CD-ROM/online hybrid') has made this new service very popular among our scientists. Of critical importance for the quality and success of the project was the active participation of experienced information specialists during the planning, testing, installation and final production stages. We continue to play an active part in supporting the end-users with workshops, documentation, advice and a help-desk for database specific questions. The Information Retrieval Services are now confronted not only with a variety of new responsibilities but also with many new opportunities for helping the users to gain the information they seek.*

Keywords: information retrieval services, end-users, intermediaries, CD-ROM/online hybrids, database searching

1. Background

The Max Planck Society (Max-Planck-Gesellschaft, MPG) encompasses approximately 100 Institutes and Research Groups which are located all over Germany (there is also one Institute in The Netherlands and one in Italy). These pursue basic research in the natural as well as in the social sciences, including such diverse fields as biology, chemistry, medicine, psychiatry, astronomy, physics, mathematics, science history, educational research, international law and many others. There are approximately 4000 scientists plus an equal number of students doing research in Institutes ranging in size from only a handful of co-workers to a staff of over 1000 at a single site. All Max Planck Institutes and Research Groups are assigned to either the 'Biological-Medical Section', the 'Chemical-Physical-Technical Section' or the 'Humanities Section', depending upon their main scientific activities. Funding of the Society is provided mainly by the German government but also by grants from various sources.

Obviously, researchers active in the forefront of science need to have the best possible access to scientific information. The libraries of the Institutes have always played a vital role in providing information resources, both through their own holdings and more recently by making CD-ROM databases available to their patrons. However, the increasing amount of information being produced, the diversity of the media being used, the complexities of installing and managing information systems, and the simultaneous reduction of library budgets and staff have made it very difficult, especially for a smaller library, to continue providing a high level of competency and service.

When bibliographic databases first started becoming available in the early 1970s, scientists of the MPG immediately took an interest in them. However, because of the amount of time, effort and money necessary to make efficient use of these new information sources, they were hardly being used. Groups of specialists were

soon established at two of the larger Max Planck Institutes (the MPI for Biochemistry near Munich and the MPI for Solid-State Physics in Stuttgart) in order to provide mediated database searches for the Institutes of their respective Sections. The specialists in these newly established Information Retrieval Services had previously been active scientists in the fields in which they are now carrying out searches. This proved to be of considerable value for the quality of the results and for the general acceptance of the service (Ref 1).

For over 20 years both groups have been actively serving the Institutes, always in close collaboration with the libraries. The 'traditional' services include online searches in all major databases (mainly through DIMDI and STN), as well as setting up, processing and distributing almost 1000 weekly literature reports (using SciSearch tapes from ISI). There has always been a very close relationship between the Information Retrieval Services and the Institutes they serve. Each Institute is visited on a regular basis (usually every 18 months) by the responsible member of the group. Extensive interviews are held with all recipients of the weekly reports and with any other members of the scientific staff in order to optimise current search strategies, to initiate new searches and to discuss other topics related to information management (Ref 2).

2. 'Managing the end-user'

Although the online hosts worked hard at improving their user interfaces, end-user searching did not become popular with our scientists until some of the more important databases became available on CD-ROM. With this new media and its more attractive interface, searching seemed much easier and the users were very eager to try it. The increasing number of databases available on the Internet has now led to the situation that almost all our scientists have experience in searching databases and mediated searching has become the exception rather than the rule. Fascinated by their new possibilities, the users do not always realise that they might not be getting a true picture of the available information simply because they are not sufficiently familiar with the contents or structure of the database they are using (Ref 3).

In recent years there has been a growing tendency in our Institutes to purchase and install CD-ROM databases locally. This was of course very welcome to the users, very prestigious for the libraries and very profitable for the producers. Although we fully support the concept that researchers must have direct access to databases, we were concerned about two important aspects: first, which criteria were being applied when choosing the databases or retrieval software and second, would direct access be interpreted as being a full replacement for professional searches? We wanted to ensure that, regardless of their choice, the scientists in our Institutes would be able to receive the most reliable search results possible, with or without the help of an intermediary (Ref 4).

We started taking a closer look at some of the information products being offered to end-users. Although we restricted our investigation to only a few important databases in our field, we soon encountered a considerable number of different versions. There were at least a half-dozen CD-ROM versions of the MEDLINE database with differences in the contents, in the retrieval capabilities, in the years covered, in the networking possibilities and so on. Current Contents were available on Diskette or on CD-ROM, one week at a time or a 52 week rolling file, with or without abstracts, single or combined editions. Often the selection of one of these versions by the users was due to coincidence, or according to the price tag, rather than an accurate knowledge of the differences. In fact most of the scientists were not even aware of the existence of other versions of the databases they were using.

The situation was especially obvious with MEDLINE, a database that we know very well through our extensive online usage and that was already being used in various CD-ROM versions in many of our Institutes. The very sophisticated indexing methods of this database helps the user to find highly relevant articles that he might otherwise have missed but only if he knows which terms are available and how to use them. Since the average user is not willing to spend much time reading manuals or help texts, the retrieval software and the user interface must efficiently guide him through the database and help him to formulate a successful search strategy. In our comparison we found that those MEDLINE CD-ROMs that performed best in this respect were not necessarily those which our scientists knew about or were already using.

From our own searching experience we knew that reliable search results depend greatly on the choice of the most appropriate database(s) for the particular question, knowing the unique structures and indexing policies of the selected database(s) and having a powerful retrieval software available that allows for the construction of efficient and database specific search strategies in each database. Given the general lack of broad searching experience in the Institutes on the one hand, and their independence in financial decisions on the other, we felt obliged (in the interest of the scientists) to become actively involved in the selection process for end-user oriented products or systems. However, despite our offers to inform and advise the Institutes before they invested more time, money and manpower, we frequently were only consulted if problems occurred after a system had already been bought and installed. In some cases the decisions in the Institutes had been influenced by inexperienced end-users who simply were not aware of the diversity of products available and the significance of their differences, and therefore had not thought it necessary to get more advice.

We realised that the only effective way to support end-user searching in our Institutes was to offer access to a system which had so many obvious advantages that it would be preferred to any other. If the Institutes could decide on a common system this would, of course, also mean that the Information Retrieval Services would be in a better position to offer support and training. The options at the time were either reaching agreements with online hosts and producers that would allow direct access to their databases (possibly at special rates), or setting

up a centralised service within the Max Planck Society based on a selection of CD-ROM databases. Taking into consideration that the decisions in the Institutes would be strongly influenced by the user interface (rather than the underlying retrieval capabilities), it was clear that most end-users would probably prefer using a CD-ROM based solution.

3. The Max-Planck/Ovid Database Server Project

The CD-ROM user interface that impressed us most was being offered by CDPlus (the name has since been changed to Ovid Technologies, henceforth referred to as Ovid). Their approach was distinctively different from that of other vendors. While Ovid had developed a very innovative common user interface it obviously had also recognised the importance of database-specific features and had not sacrificed them for the sake of simplicity. The use of these features makes considerable difference in the quality of a search. They are, however, often difficult to comprehend and their correct application is frequently a problem, even for experienced searchers. Although other vendors may have kept the features available for use by experts who know where to look for them and how to use them, Ovid has successfully integrated them into easy-to-use search tools that the end-user can apply without the necessity of having prior knowledge of their existence or meaning.

We had tested Ovid's CD-ROM versions of MEDLINE and Current Contents and in both cases we felt that the database-specific structures had been incorporated exceptionally well, and that an end-user could easily learn how to use them correctly. Ovid's user interface allows searches to be entered in various ways according to the individual level of expertise. Tools such as natural language mapping to controlled vocabulary, integrated graphical thesauri, database-specific search limits and simultaneous on-screen user support are not only extremely useful for the novice but are also welcome aids for experts. The end-user is unobtrusively guided towards a deeper understanding of how the database-specific tools and the powerful command syntax can be employed to achieve better search results (Ref 5).

After learning more about the number of databases available under Ovid and, in particular, about the very interesting multi-platform network solutions they were offering, it was decided to consider Ovid for the installation of a central database service for the Max Planck Society. Besides their unique user interface, several further advantages were soon identified. These included the use the TCP/IP protocol which would allow immediate access from a number of different platforms (DOS, Windows, Macintosh, and VT-100 terminals), the client/server architecture with its inherent division of labour and reduction of network traffic, and the adherence to the Z39.50 standard allowing interconnectivity to many other library servers (Ref 6).

The databases and the Ovid software may be installed on a Unix-based server without the necessity of having multiple CD-ROM drives or 'juke boxes'; CD-ROMs are then merely used as transport media for database updates. In fact, databases offered under the same Ovid Database Selection Menu can be physically distributed over several different servers at different locations on different computer platforms and installed on either hard disks or CD-ROMs, without the end-user noticing any significant differences to a local CD-ROM or hard disk installation. Of particular interest to several of our institutes was the fact that with the aid of an Ovid Local Loader it would be possible for their scientists to search databases produced internally under the same common user interface as the commercial databases being offered on the server.

It was vital to the success of the project that the Institutes themselves be convinced of the quality, reliability and prospects of this new service and thus be willing to pay their share of the costs. It was therefore decided to install the Unix version of the Ovid software on a server located in Göttingen at the GWDG (Gesellschaft für Wissenschaftliche Datenverarbeitung), a computer centre of the Max Planck Society, load a number of databases that would be of interest to a large portion of the Institutes and then provide unrestricted access from all sites for a seven-month trial period before reaching a final decision.

The trial period began in April 1995 with the complete MEDLINE database (1966 to the present) and Current Contents/all editions (1995, cumulative). During the last three months of the trial the BIOSIS Previews database was added. We would have liked to include more databases, in particular some that would be of greater interest to the Institutes of the other two Sections of the Society, but this proved to be difficult to negotiate. Coming to an agreement with Ovid was not the problem but getting acceptable pricing from the database producers was a different matter. The major issue was: should the Max Planck Society (comparable in size to an average German University) be considered as a single site or as 100 individual sites? Regrettably, not all producers were willing to offer a concurrent-user based pricing scheme.

The trial agreement with Ovid included a series of introductory workshops which were held at several of our larger sites throughout Germany. This provided a good opportunity for the Information Retrieval Services to present database specific information to the prospective users that was not readily available elsewhere, but nevertheless important for them to know, in order to select the most appropriate databases and to develop effective search strategies. Many of those attending these workshops had assumed they already knew enough about the databases and were only interested in learning how to access this new system. Afterwards, almost all participants stated that they were surprised by many of the important aspects they had learned about the databases, and that learning how to access the system and how to use the Ovid interface was quite simple in comparison. Thus, in addition to introducing new searching capabilities for end-users the workshops served to underline the fact that database specific knowledge is an essential factor and that this expertise is available to the user through the Information Retrieval Services.

At the beginning of the trial period, access was only possible via a telnet session using a character-based

interface which had nevertheless the same basic layout and similar functionality as a graphic interface. Interest in the service was immediate, and within the first few weeks several hundred users had applied for passwords and were performing searches. It was important for the success of the project that the Ovid Windows Client became available to our users at least during the last three months of the trial. For those scientists working with Windows, this provided a very convincing alternative to local CD-ROM holdings of the same databases. The prospect of soon having the same graphical interface and improved functionality available for the Macintosh and other platforms led to a very favourable reception of the project.

The decisive questions were now: how should the future costs be spread among the Institutes? How much would the individual Institutes be prepared to spend for such a service? Would the total amount received be enough to continue with the present databases? Was there a willingness to pay for additional databases? Various models for the distribution of the costs have been proposed. The yearly costs to the Max Planck Society depend mainly on the number of *users* who are allowed access to the databases: the currently adopted internal cost-distribution scheme, however, is based on the amount of *usage* of each database by each Institute (which of course is much more complicated to determine). We would be very interested to learn how other consortia are handling this issue. In our opinion one of the most significant advantages of flat-rate pricing is that it encourages higher usage of valuable information resources, which should be the major objective in the installation of such database services.

In November 1995 the final agreements were signed and the transition from trial period to full production phase took place without interruption. Currently (June 1996) there are approximately 1400 active user IDs and the server is being accessed from 87 Institutes or Research Groups. Nearly 7000 database searches are being carried out per month. Comments on the quality and performance of the new service have been very positive. With the introduction of the Ovid Web Gateway an additional platform-independent point of access has recently become available which has the same basic functionality, plus some very useful new Web-specific features.

Ovid has helped us to establish a modern database service for the Max Planck Society that has all the advantages of CD-ROM databases (for example user-friendly interface, fixed fees) but without many of the disadvantages of actually running CD-ROMs in a network. In addition we have the advanced performance capabilities that are more typical of an online system — a true CD-ROM/online hybrid (Refs 7–9). Although other vendors (e.g. Silver Platter, Knight-Ridder) are now also offering interesting hybrid solutions, we feel they have not yet reached the same level of performance and quality, especially in their implementation of database-specific features.

We consider the current status to be only the initial phase in the development of adequate electronic information resources for end-user searching in the Max Planck Society. Compared to the present situation in most German universities we have made significant progress, but compared to top-ranking US or British universities we still have a long way to go. Access to full-text sources, links to document delivery services, links to library OPACS and the inclusion of further databases are topics that need to be addressed soon. Other models of end-user searching are also currently being tested. A recent fixed-fee agreement between STN and the MPG allows unlimited access to the INSPEC database. A further possibility would be to access databases being offered by online vendors which adhere to the Z39.50 standard directly from the Ovid client or Ovid Web Gateway.

4. An enhanced role for the information professional

The Information Retrieval Services of the Max Planck Society have played a major role in initiating, planning, testing and introducing the new central database services. We will continue to play an active part in supporting the end-users with workshops, documentation, advice and a help-desk for database specific questions. This will help to keep us in close contact with the scientists in our Institutes and ensure that they know where to turn if they need more detailed information or if they prefer to have a search done for them by an experienced professional searcher.

We feel that it is important for our scientists to have *both* possibilities: expert searches through intermediaries and direct access to a selection of databases. Depending on the situation, the user can then choose whatever he feels is the most appropriate method. Our observations have shown us that in the majority of our Institutes, end-user-searching has been welcomed as an important *additional* option and is not seen as a substitute for the traditional services. Despite the rapidly increasing number of searches being carried out by the end-users themselves, there has been only a slight decrease in the number of search requests to the intermediaries. This (momentary?) reduction is quite convenient because it allows us to spend more time with the more demanding searches and with providing support to end-users. The Information Retrieval Services are now confronted not only with a variety of new responsibilities but also with many new opportunities for helping the users to gain the information they seek.

The participation of experienced intermediaries in the decision-making process will continue to be of utmost importance. Care should be taken that the available expertise is not 'sacrificed' for the establishment of services that leave the users only one option, namely to rely on their own search results using systems that were chosen for them by well-meaning but perhaps less-experienced persons.

'Will intermediaries be "disintermediated" or will this mean an enhancement to their role?'

The answer to this question (as posed by the organisers of this conference) lies mainly in the hands of the intermediaries themselves. Only if they are willing to accept the challenges of the new electronic information environment and to participate actively in its further development can they hope to continue having an influence

on the quality of the services available to the users. It is precisely their knowledge and experience in dealing with users and databases which is most urgently needed for making the right decisions, now and in the future.

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